UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,548	01/05/2001	Francis A. Moody	YAFO-3	3727

7590 08/18/2004

Stephen R. Whitt
1215 Tottenham Court
Reston, VA 20194

EXAMINER	
NG, CHRISTINE Y	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/754,548	MOODY, FRANCIS A.	
	Examiner	Art Unit	
	Christine Ng	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *12-15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6-17 and 21-23* is/are rejected.

7)☒ Claim(s) *3-5 and 18-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 January 2001 and 03 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "first and second routers" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 6, 9, 10, 16, 17, 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,370,155 to Cantwell et al.

Referring to claim 1, Cantwell et al discloses in Figure 5 a router interface comprising:

A plurality of parallel channels (21 byte blocks), wherein each of the parallel channels is adapted to transmit a block of bits (one byte), and wherein the blocks (one

byte) form at least a portion of a packet (PCM data). The PCM data is "read out of the DPRAM in a linear, byte interleaved format in 21 byte blocks" (Column 18, lines 59-60).

A parallel-to-serial converter (Matrix Interface 106) converting each of the blocks (one byte of 21 byte blocks) into a serial stream of data and providing the stream to a serial interface. "Twenty one parallel to serial converters produce the serial PCM data streams..." (Column 18, line 60-62).

A plurality of framers (Transceiver/Framer 104) coupled to the serial interface, wherein each of the framers (Transceiver/Framer 104) is associated with one of the plurality of parallel channels (21 byte blocks). "Twenty one parallel to serial converters produce the serial PCM data streams fed to the Transceiver/Framer 104" (Column 18, line 60-62).

Referring to claim 2, Cantwell et al discloses in Figure 5 that each of the blocks (one byte) is at least a byte wide, and wherein each of the parallel channels (21 byte blocks) has at least a byte-wide interface for grabbing the block of data. The PCM data is "read out of the DPRAM in a linear, byte interleaved format in 21 byte blocks". (Column 18, lines 58-60).

Referring to claim 6, Cantwell et al disclose in Figure 5 that each of the plurality of framers (Transceiver/Framer 104) add a synchronization word (system bit) that serves as a temporal marker. At the transceiver/framer 104, "frame synchronization status and framing bit errors are reported" (Column 17, lines 65-66). Transceiver/ Framer 104 also outputs the serial PCM streams aligned to the system bit and framing timing. Refer to Column 18, lines 7-12.

Referring to claim 9, Cantwell et al disclose in Figure 5 that each of the framers (Transciever/Framer 104) provides time synchronization between at least two of the channels (21 byte blocks) by adding a synchronization word (system bit). Transceiver/ Framer 104 outputs the serial PCM streams aligned to the system bit and framing timing. Refer to Column 18, lines 7-12.

Referring to claim 10, Cantwell et al disclose in Figure 5 that each of the framers (Transceiver/Framer 104) provides at least one of an error detection code (Parity bit) and a forward error correction. At the transceiver/framer 104, "frame synchronization status and framing bit errors are reported" (Column 17, lines 65-66). Refer to Column 18, lines 33-35.

Referring to claim 16, Cantwell et al disclose in Figure 5 a router interface comprising:

A plurality of framers (Transceiver/Framer 104), wherein each one of the plurality of framers (Transceiver/Framer 104), receives an individual serial electrical signal. Transceiver/Framer 104 outputs 21 serial PCM streams aligned to the system bit and frame timing" (Column 18, lines 7-9).

A plurality of buffers (Matrix Interface 106), wherein each one of the plurality of buffers (Matrix Interface 106) receives and buffers data from a corresponding one of the plurality of framers (Transceiver/Framer 104). "The inbound Matrix interface 106 accepts the 21 system timed, serial PCM streams" (Column 18, lines 30-31).

A serial to parallel converter (Matrix Interface 106), receiving data output from the plurality of buffers (Matrix Interface 106), and combining the data into a plurality of

parallel data blocks. "The streams are converted to a parallel format and multiplexed to produced the 5.376 MHz byte wide data stream" (Column 18, lines 31-33).

Referring to claim 17, Cantwell et al discloses that the parallel data blocks is at least a byte wide and wherein the plurality of parallel data blocks are output via a plurality of parallel channels. "The streams are converted to a parallel format and multiplexed to produced the 5.376 MHz byte wide data stream" (Column 18, lines 31-33).

Referring to claim 21, Cantwell et al disclose the data is released from at last one of the plurality of framers (Transceiver/Framer 104) to the serial to parallel converter (Matrix Interface 106) in response to a time stamp. The "inbound Matrix Interface 106 accepts the 21 system timed, serial PCM streams" which are then "converted to a parallel format..." (Column 18, lines 30-32).

Referring to claim 22, refer to the rejection of claims 1 and 16.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,370,155 to Cantwell et al in view of U.S. Patent No. 6,654,383 to Haymes et al.

Referring to claim 7, Cantwell et al do not disclose that the framers is a

combination of hardware and software.

Haymes et al disclose in Figure 2 a framer 200 that "may be implemented in software running on a processor, hardware, or a combination of software and hardware..." (Column 4, lines 26-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the framer is a combination of hardware and software; the motivation being so that the framer can be implemented in hardware and then programmed by software to be easily varied in order to adjust to changing demands.

Referring to claim 11, Cantwell et al do not disclose that each of the framers scrambles packet data.

Haymes et al disclose in Figure 2 a framer 200 comprising a scrambler 206. The scrambler 206 is configured to "extract payload and overhead fields within the incoming frame which has been previously scrambled in order to provide sufficient bit transitions in the data stream" and may "additionally provide data encoding/decoding for error detection and/or correction purposes". Refer to Column 6, lines 1-24. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that each of the framers scrambles packet data; the motivation being so that the scrambler can extract the real data in the data stream and provide for error detection and correction, thereby improving the accuracy of the data transmission.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,370,155 to Cantwell et al in view of U.S. Patent No. 6,081,524 to Chase et al.

Cantwell et al do not disclose that each of the framers converts communications packets from at least one format selected from a group consisting of TCP, SNA, IPX, into frames that can be sent over a frame relay network.

Chase et al disclose in Figure 2 the conversion of TCP packets into a format that can be sent over a frame relay network. Refer to Column 1, line 39 to Column 2, line 17. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that each of the framers converts communication packets from the TCP format into frames that can be sent over a frame relay network; the motivation being that a frame relay network leaves error correction to the endpoints by dropping frames when error is detected, thereby speeding up the transmission of TCP/IP packets over the Internet.

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,370,155 to Cantwell et al in view of U.S. Patent No. 6,271,946 to Chang et al.

Cantwell et al do not disclose a WDM transport system between the routers.

Chang et al disclose in Figure 1 a WDM transport system (Element 110) between routers (Elements 101, 102 and 103). Refer to Column 7, lines 46-56. WDM has "fostered the development of networks that are orders of magnitude higher in transmission bandwidth and lower in latency than existing commercial networks" (Refer to Column 1, lines 23-33). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include WDM transport system between

the routers; the motivation being that WDM offers an increase in throughput and a decrease in latency.

Allowable Subject Matter

9. Claims 3-5 and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (703) 305-8395. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Chau can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng CN
August 12, 2004

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600